^{143}Tb ε decay 1986Re11

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. Browne, J. K. Tuli	NDS 113, 715 (2012)	31-May-2011

Parent: ^{143}Tb: E=0.0; J^π=(11/2$^-$); $T_{1/2}$=12 s *1*; Q(ε)=7.81×10^3 *21*; %ε+%β$^+$ decay=100.0
Produced in ^{112}Sn(^{35}Cl,2n2p) E=191 MeV.
Measured: γ rays, γγ, K x ray-γ.

^{143}Gd Levels

E(level)	J$^\pi$[†]	$T_{1/2}$	Comments
0.0	(1/2)$^+$	39 s *2*	%ε+%β$^+$=100 $T_{1/2}$: from 1978Fi02.
45.1	(3/2$^+$)		
152.6	(11/2$^-$)	110.0 s *14*	%ε+%β$^+$=100 $T_{1/2}$: wt av: 112 s *2* (1978Fi02), 108 s *2* (1976Wi09), 114 s *18* (1973VaYZ).
354.3	(5/2$^+$)		
407.5	(5/2$^+$)		
493.1	(9/2$^-$)		
787.9	(7/2)		
1250.7	(9/2,11/2$^-$)		
1474.0	(9/2,11/2$^-$)		

[†] From Adopted Levels.

γ(^{143}Gd)

E$_\gamma$	I$_\gamma$	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.	α[†]	Comments
45.1 *3*	≈210	45.1	(3/2$^+$)	0.0	(1/2)$^+$	[M1]	3.19 *8*	α(L)=2.50 *6*; α(M)=0.544 *14*; α(N+..)=0.146 *4* α(N)=0.125 *3*; α(O)=0.0194 *5*; α(P)=0.00129 *4* I$_\gamma$: The large Iγ (and I(γ+ce)) suggests direct strong ε population of this 3/2$^+$ level, but such ε transition from 12 s (11/2$^-$) ^{143}Tb is unlikely. Thus, it may originate from another, as yet unknown, low spin (5/2$^+$) isomer of ^{143}Tb with possible $T_{1/2}$=17 s *4* or ≈12 s (1986Re11).
223.3 *3*	48 *5*	1474.0	(9/2,11/2$^-$)	1250.7	(9/2,11/2$^-$)			
294.8 *3*	24 *3*	787.9	(7/2)	493.1	(9/2$^-$)			
309.2 *3*	84 *8*	354.3	(5/2$^+$)	45.1	(3/2$^+$)			
340.5 *3*	82 *8*	493.1	(9/2$^-$)	152.6	(11/2$^-$)			
362.4 *3*	86 *9*	407.5	(5/2$^+$)	45.1	(3/2$^+$)			
380.3 *3*	90 *9*	787.9	(7/2)	407.5	(5/2$^+$)			
407.5 *3*	37 *4*	407.5	(5/2$^+$)	0.0	(1/2)$^+$			
433.7 *3*	86 *9*	787.9	(7/2)	354.3	(5/2$^+$)			
462.8 *3*	95 *9*	1250.7	(9/2,11/2$^-$)	787.9	(7/2)			
686.1 *3*	100 *10*	1474.0	(9/2,11/2$^-$)	787.9	(7/2)			

[†] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

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Decay Scheme

Intensities: Type not specified